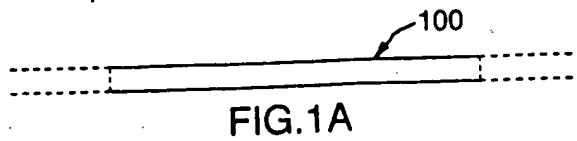




Replacement Sheet

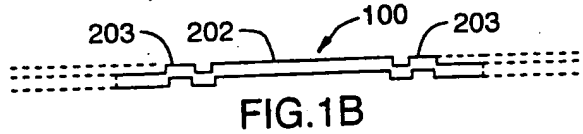
Step 1: Raw material (Copper Panel)

(Prior Art)



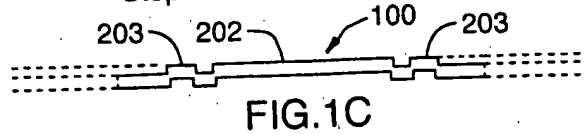
Step 2: Both side partial etch

(Prior Art)



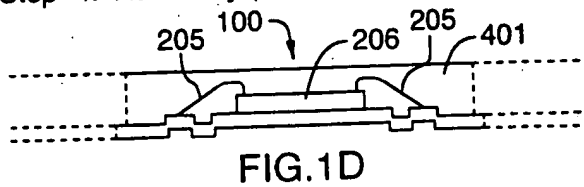
Step 3: Full Ni / Pd plating

(Prior Art)



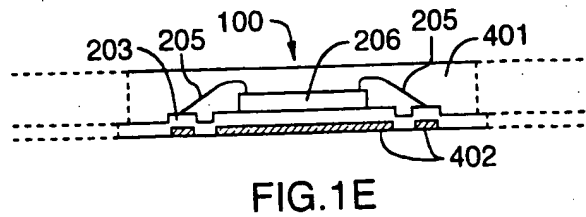
Step 4: Assembly (D / A, W / B and Molding)

(Prior Art)

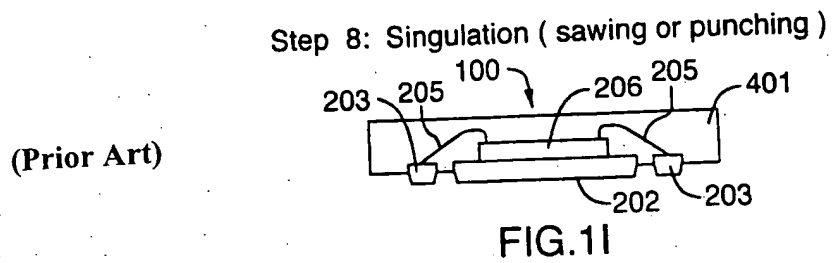
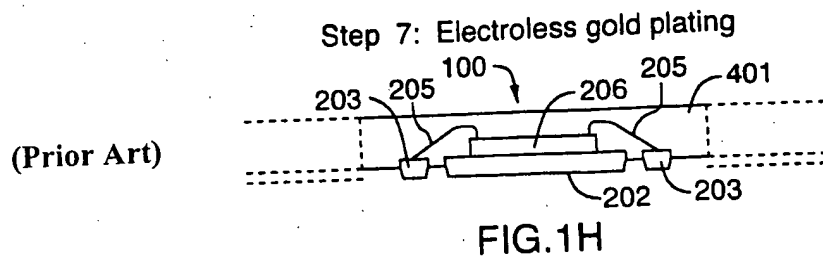
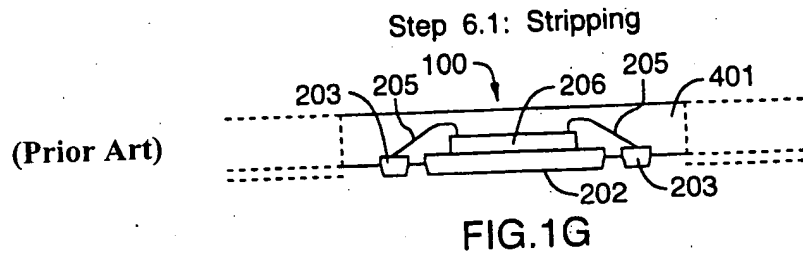
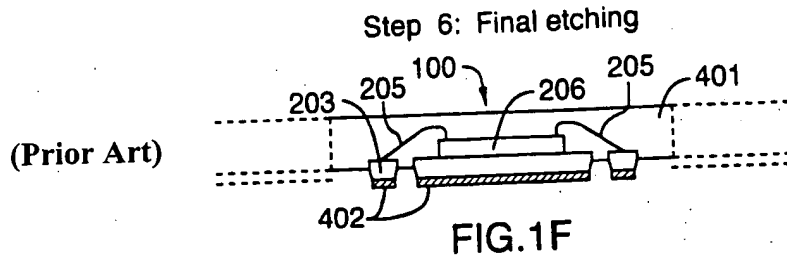


Step 5: Photo-resist (wet film) printing and curing (development)

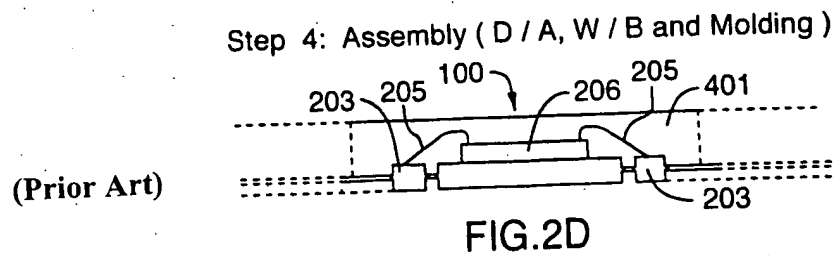
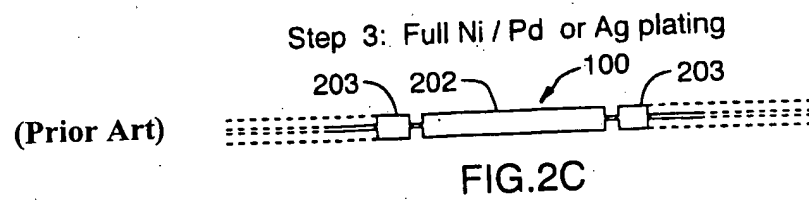
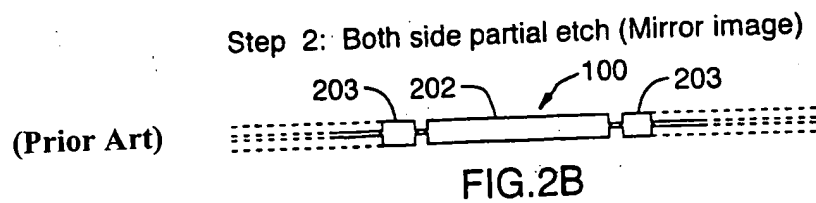
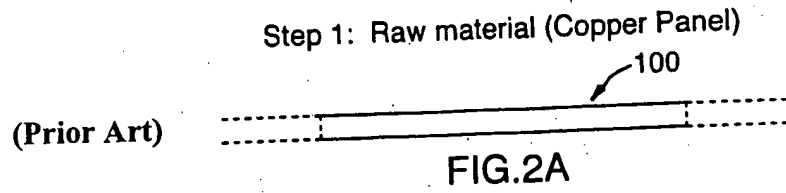
(Prior Art)



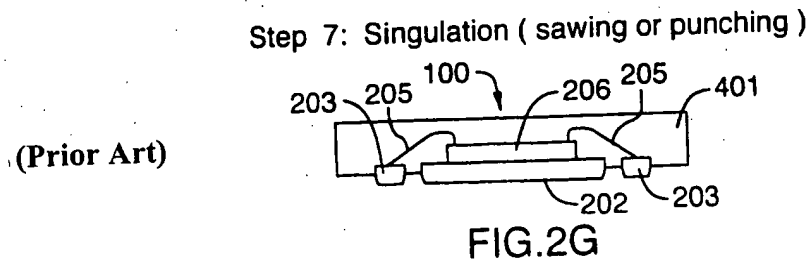
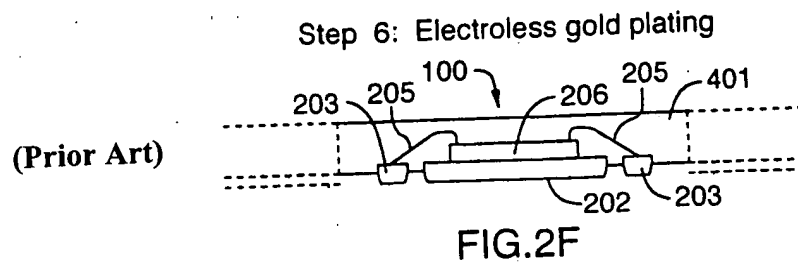
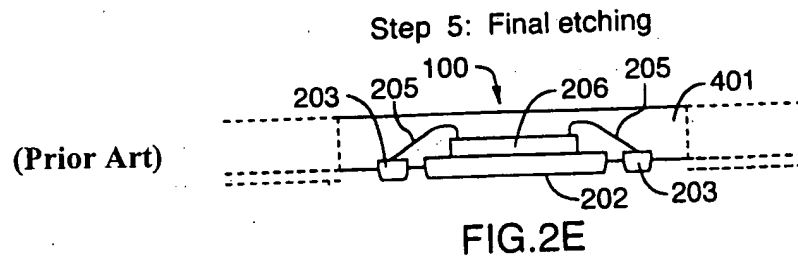
Replacement Sheet



Replacement Sheet



Replacement Sheet



Replacement Sheet

Step 1: Raw material (Copper Panel)

(Prior Art)

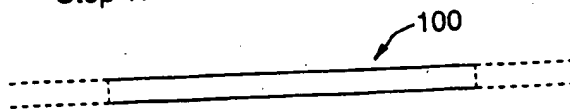


FIG. 3A

Step 2: Top side partial etch

(Prior Art)



FIG. 3B

Step 3: Full Ni / or Ag plating

(Prior Art)

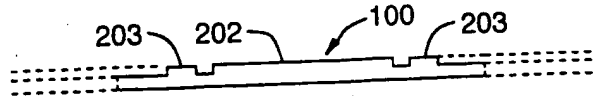


FIG. 3C

Step 4: Assembly (D / A, W / B and Molding)

(Prior Art)

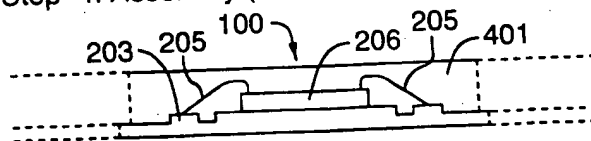


FIG. 3D

Replacement Sheet

Step 5: Final etching

(Prior Art)

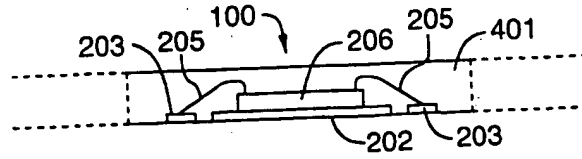


FIG.3E

Step 6: Electroless gold plating

(Prior Art)

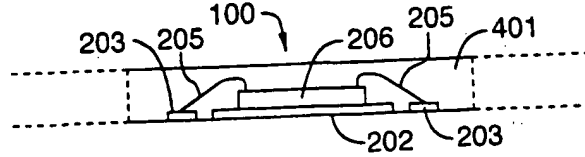


FIG.3F

Step 7: Solder ball attachment (optional)

(Prior Art)

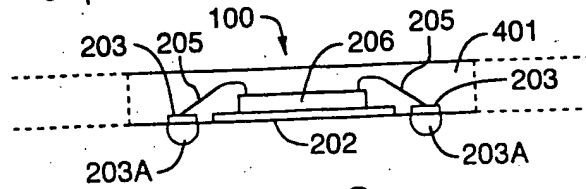


FIG.3G

Step 8: Singulation (sawing or punching)

(Prior Art)

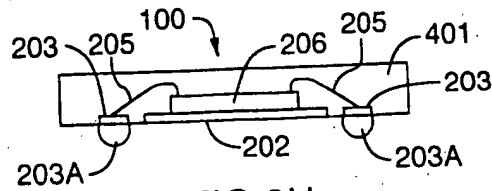


FIG.3H

Replacement Sheet

Step 1: Raw material (Copper Panel)

(Prior Art)

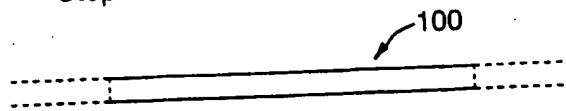


FIG. 4A

Step 2: Top side partial etch

(Prior Art)

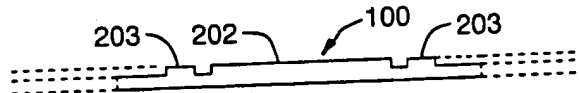


FIG. 4B

Step 3: Full Ni / or Ag plating

(Prior Art)



FIG. 4C

Step 4: Assembly (D / A, W / B and Molding)

(Prior Art)

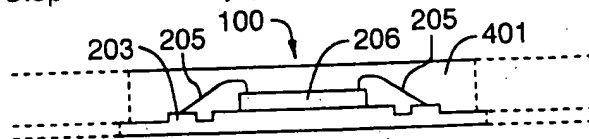


FIG. 4D

Step 5: Photo-resist application, exposure, and developing

(Prior Art)

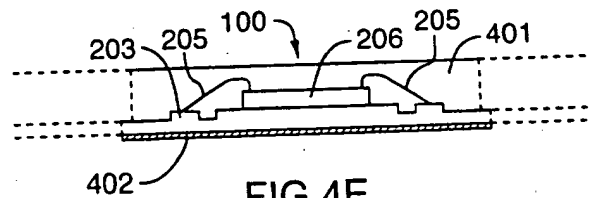
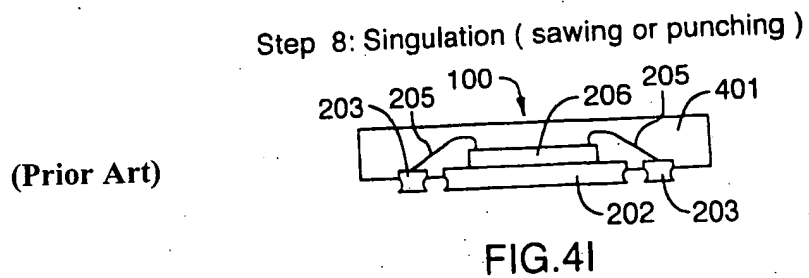
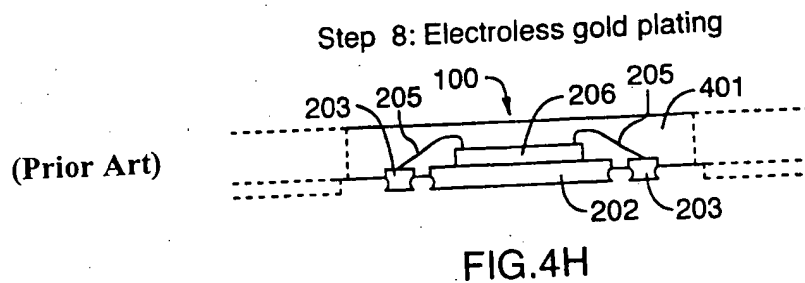
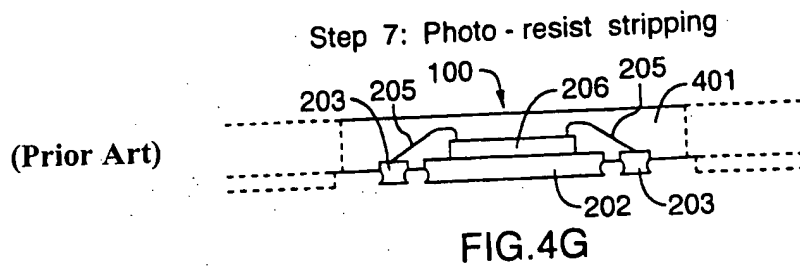
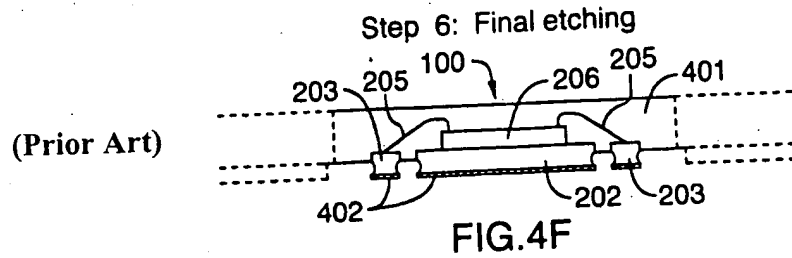


FIG. 4E

Note : Dry film laminating or Wet-film spin coating

Replacement Sheet



Replacement Sheet

Step 1: Raw material (Copper Panel)

(Prior Art)

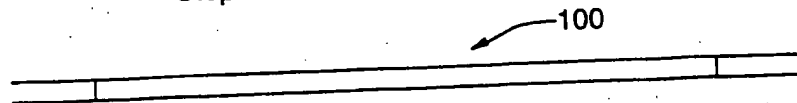


FIG.5A

Step 2: Photo resist lamination and development

(Prior Art)

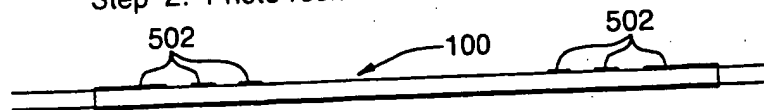


FIG.5B

Step 3: Cu/Ni/Au electrolytic plat up for "1st level connect"

(Prior Art)

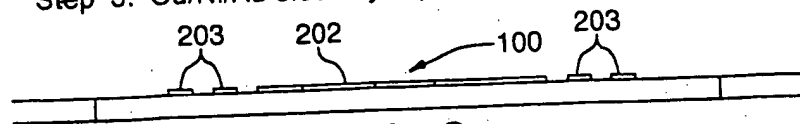


FIG.5C

Step 4: Stripping

(Prior Art)

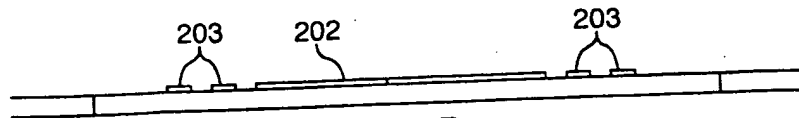


FIG.5D

Step 5: -ve photo-resist lamination and development

(Prior Art)

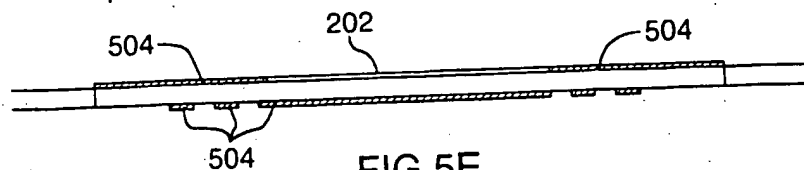


FIG.5E

Replacement Sheet

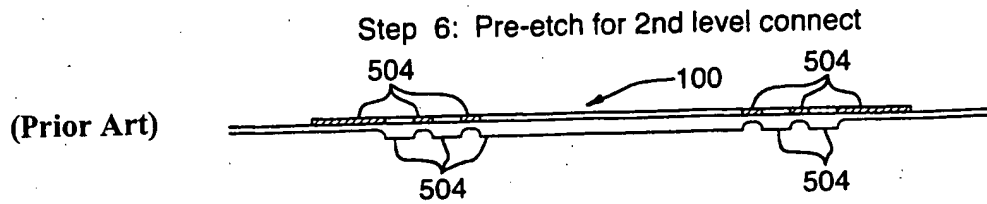


FIG.5F

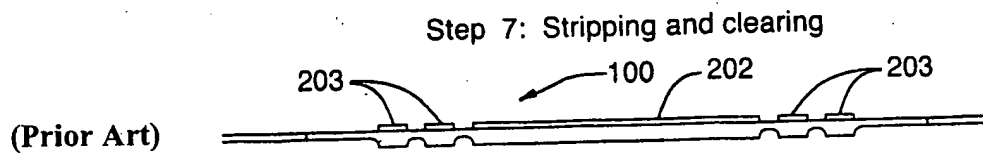


FIG.5G

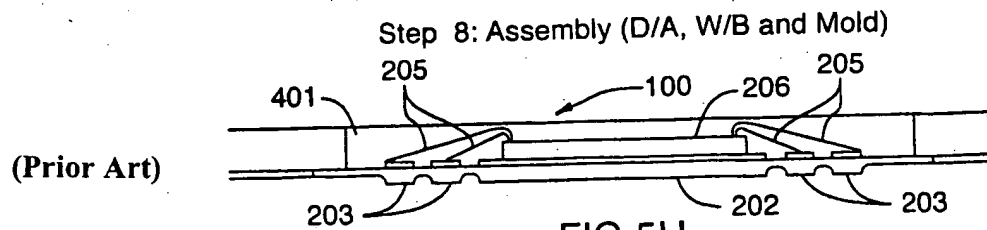


FIG.5H

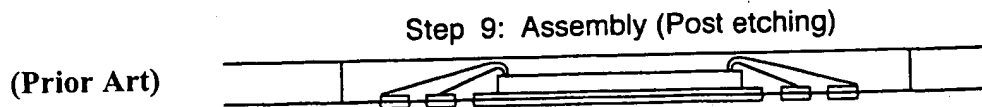


FIG.5I

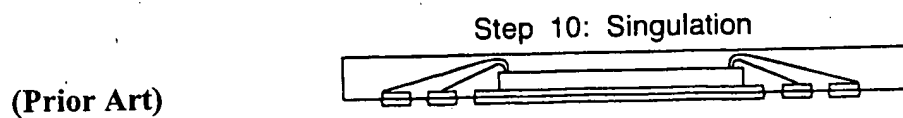


FIG.5J

Replacement Sheet

Step 1: Raw Material (Copper Panel)



FIG. 6A

Step 2: Masking for Plate-Up Process

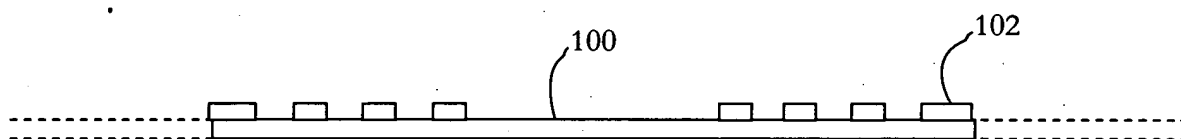


FIG. 6B

Step 3: Plate-Up for "1st Level Connect"

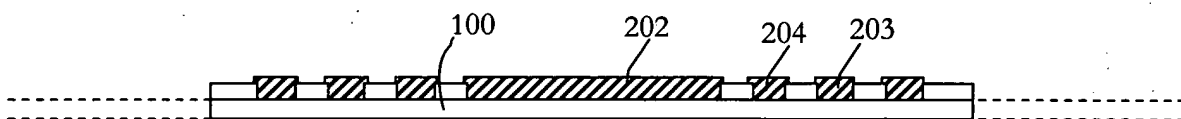


FIG. 6C

Replacement Sheet

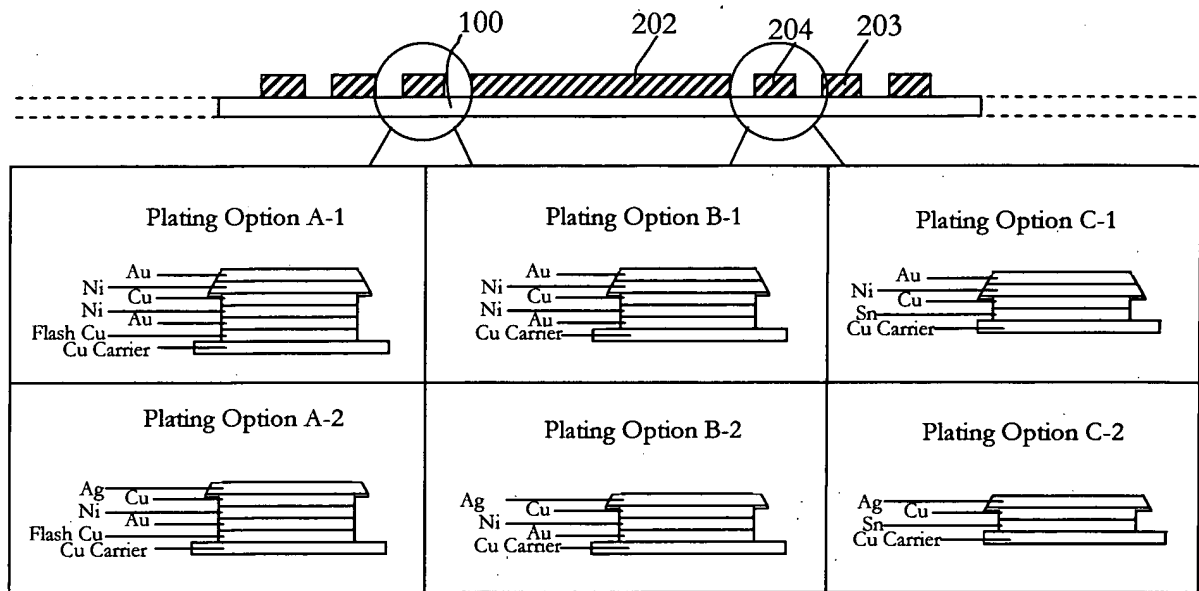


FIG. 6D

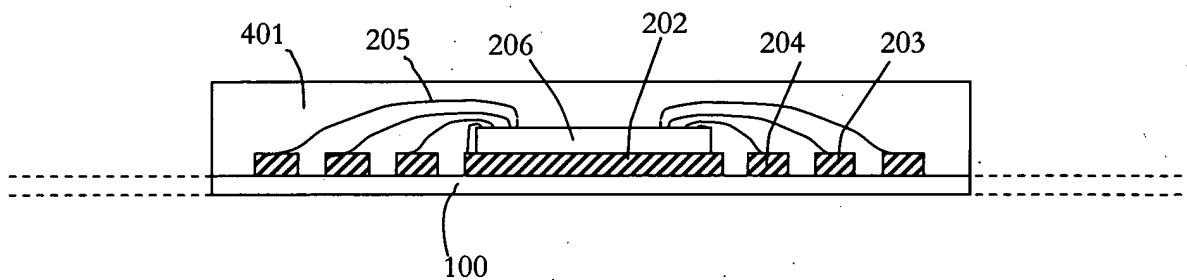
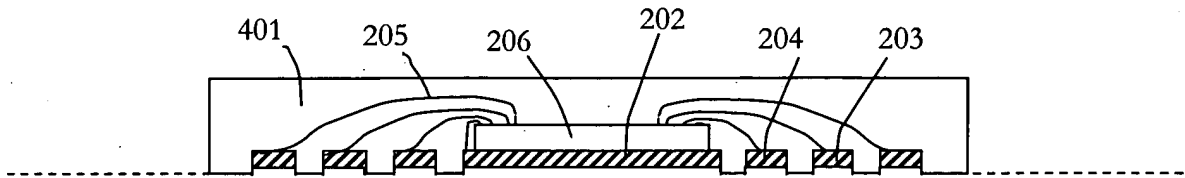


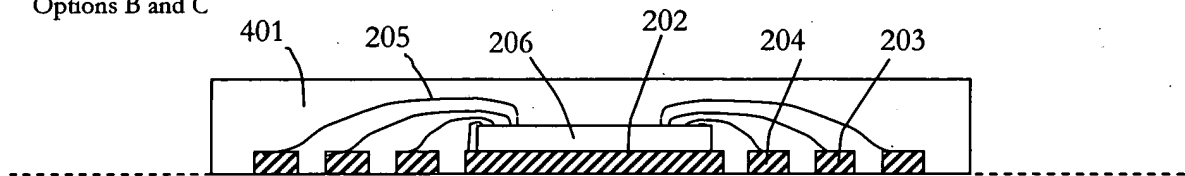
FIG. 6E

Replacement Sheet

Option A



Options B and C



<p>Plating Option A-1</p>	<p>Plating Option B-1</p>	<p>Plating Option C-1</p>
<p>Plating Option A-2</p>	<p>Plating Option B-2</p>	<p>Plating Option C-2</p>

FIG. 6F

Replacement Sheet

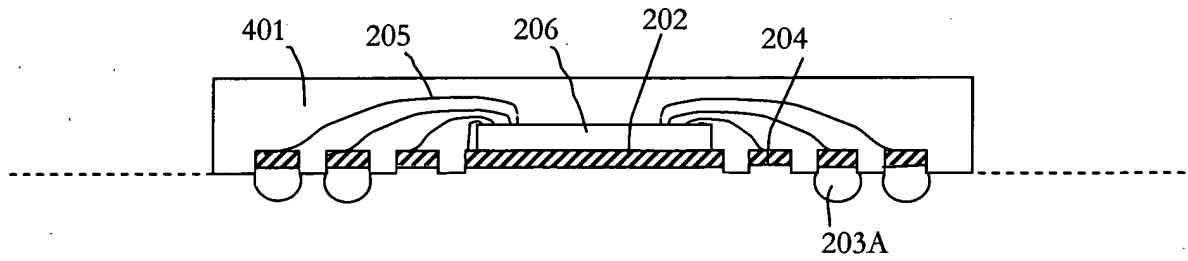
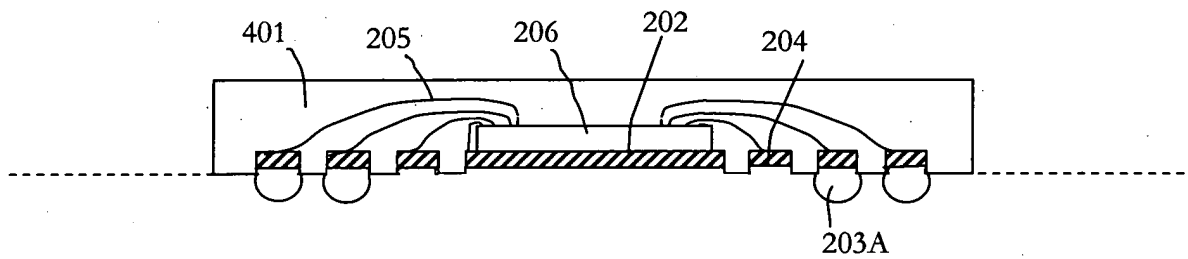


FIG. 6G

Options B and C



Options B and C

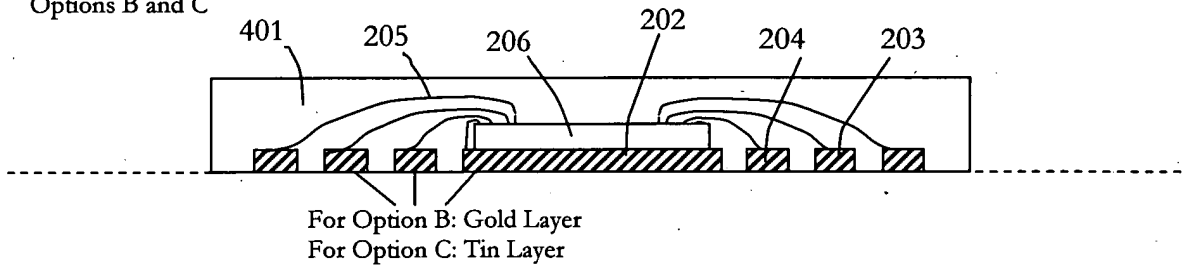
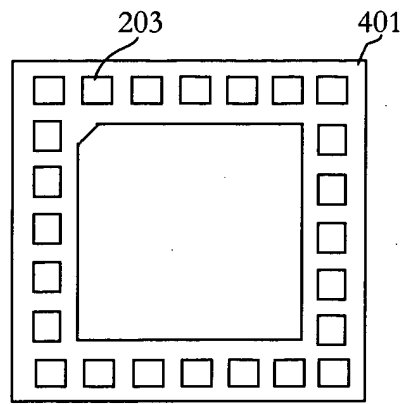


FIG. 6H

Replacement Sheet



Peripheral Type (Single Row)

FIG. 7

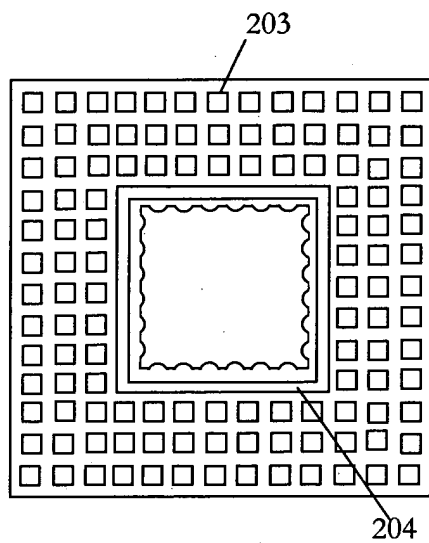


FIG. 8A

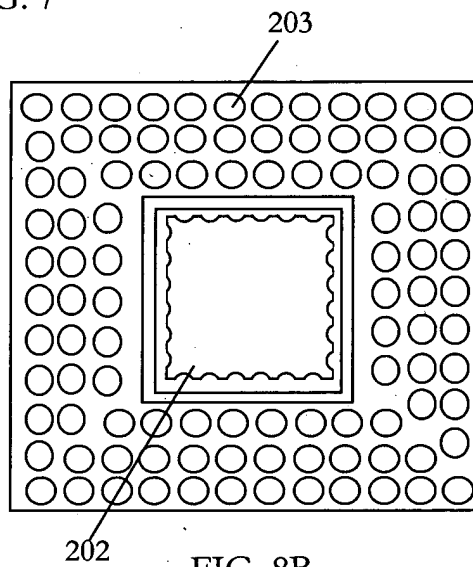


FIG. 8B

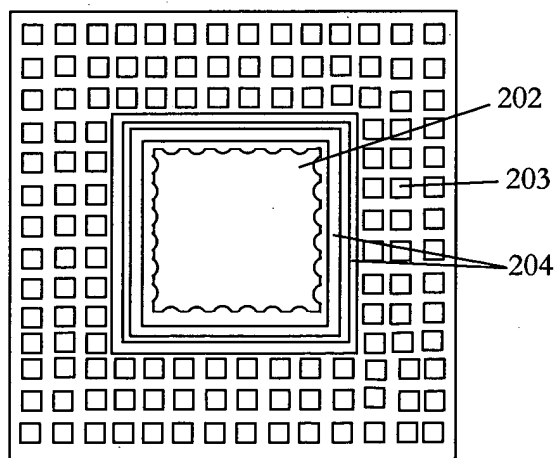


FIG. 9